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Study Discovers How Capsaicin Helps Blood Pressure Health

By Greg Arnold, DC, CSCS, August 12, 2010, abstracted from "Activation of TRPV1 by Dietary Capsaicin Improves Endothelium-Dependent Vasorelaxation and Prevents Hypertension" in the August 2010 issue of Cell Metabolism

Link - <http://www.nowfoods.com/BasicArticles/080345.htm>

The National Institutes of Health classify a healthy blood pressure as 120/80 mmHg or less, a blood pressure between 120/80 and 140/90 as "Prehypertension", and 140/90 mmHg or greater as high blood pressure (1). High blood pressure has been deemed to be a worldwide epidemic (2) as it increases the heart's workload, causing the heart to thicken and increasing risks for stroke, heart attack, kidney failure and congestive heart failure (3). High blood pressure was estimated to cost our healthcare system \$73 billion in 2009 (4).

While soy foods (5), fiber (6), fish oil (7), Pycnogenol® (8), beta -glucan (9) and pea protein (10) have all been found to help maintain blood pressure health, research has also found capsaicin, found in peppers, to also be beneficial (11). Now a new study (12) has found out how capsaicin may be able to elicit its blood pressure health properties.

In a lab study, mice lacking the endothelial receptor, TRPV1 were fed either a standard diet or a diet supplemented in with 0.01% capsaicin for 6 months. Researchers then isolated the arterial endothelial cells from these mice and found that capsaicin was an agonist of the TRPV1 (13). TRPV1 activation by capsaicin caused both a release of calcium, as well as an increase in nitric oxide levels, both of which have been shown to cause a relaxation of blood vessels (14, 15).

To examine whether activation of TRPV1 by capsaicin could modulate vascular function and hence reduce arterial pressure in hypertension in vivo, spontaneously hypertensive rats (SHR) were fed a diet of 15 mg/kg of bodyweight of capsaicin for 7 months. Chronic capsaicin treatment resulted in a significant reduction in systolic blood pressure by the fifth month as compared with placebo, with an average drop of 8% in the capsaicin group (195 to 180 mmHg) versus a 2.5% increase (195 to 200 mmHg) in the placebo group.

For the researchers, "Our results suggest that endothelial TRPV1 is a potential therapeutic target in the management of hypertension and related vascular diseases."

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